

REMARKS**1. Objections to the Specification**

The abstract of the disclosure was objected to. An amended abstract is included with this response.

2. Objections to the Drawings

The Examiner objected to the drawings as not showing every feature of the claimed invention. In particular, the Examiner indicated that the camera, lens, and film were not shown in the drawings. Therefore, a newly proposed drawing is introduced with this response. FIG. 6a illustrates a recording camera system in accordance with the present invention. Camera (80), lens (84), film (94), longitudinal axis (86) and transverse axis (88) are shown in FIG. 6a as requested by the Examiner.

3. Claims rejected under 35 U.S.C. § 102(e)

Claims 1-5, 7, 11, and 17-21 were rejected under 35 U.S.C. § 102(e) as being anticipated by US Patent No 6,017,276 to Elson et al.

Elson et al. does not anticipate claims 1-5, 7, 11, and 17-21. Elson et al. teaches away from the claimed invention and is not relevant art. Elson et al. teaches a sphere with a small number of seats located within, and an image being projected inside the sphere to an upward looking audience. Elson et al. does not teach the downward looking component critical to the Applicant's invention. These are two very different projection techniques which face entirely different sets of problems. As stated in applicant's specification in paragraph [0003]

“...the technology that presently exists for projecting a scene to an upward looking audience is not satisfactory.” (emphasis added).

Furthermore, the device as disclosed by Elson et al. cannot accommodate a screen extending any significant distance below the viewers, because the viewers themselves would interfere with the light being projected. Moving the projector higher and pointing it down would not solve the problem, because this would instead create the very distortion depicted in FIG. 4 of the pending application. The horizon would appear curved, and all images would be distorted as discussed in paragraph [0015]:

“...the image must then be moved lower to compensate for the raising of the projector. This could be accomplished by tilting the projector downwardly to project the image downwardly to fill the screen 12 with the picture. However, tilting causes an unrealistic image to be displayed, as shown in Fig. 4. Tilting of

projector 28 will cause the horizon 38, as well as other horizontal lines and edges, to appear curved. Lines that are not horizontal will also be affected to varying degrees; for example, lines that should be seen as parallel may appear to diverge, and the resulting images will not appear life like."

The Examiner further states that alignment of the centerlines of a lens and projector is inherent. This may be a normal condition, but it is not inherent, and is not the case in the applicant's invention. Elson et al. does not discuss the position of the lens relative to the projector or film, because it does not need to solve the problem solved by the present invention, which is to project a truly lifelike image, a part of which is substantially below the viewer. As discussed above, if the screen in the small sphere of Elson et al. could somehow be extended below the viewers, the projector would have to be moved considerably higher and pointed down to clear the heads of the viewers and project the image down. The centerlines of the lens and centerline of projection would no longer be horizontal as required by the claims, and the horizon would be curved, as in FIG. 4 of the application.

Claim 1 has been amended to more accurately claim certain aspects of the present invention. It now reads that the axial centerline of the lens is positioned away from the centerline of projection. In other words, the centerline of the lens is moved away from the centerline of projection. Additionally, language has been added to claim 1 to describe that the screen extends a defined distance below the viewer. This is something not disclosed or suggested by Elson et al.

The Applicant respectfully disagrees with the Examiner's rejection of claims 11, 17-21 as being anticipated by Elson et al.

All elements of the claimed invention must be disclosed in a single reference for anticipation to exist. Atlas Powder Co. v. E. I. DuPont de Nemours & Co., 750 F.2d 1569, 224 U.S.P.Q. 409 (Fed. Cir. 1984). Missing elements cannot be supplied by the knowledge of one skilled in the art or the disclosure of another reference in order to give rise to an anticipation rejection. Structural Rubber Products Co. v. Park Rubber Co., 749 F.2d 707, 223 U.S.P.Q. 1264 (Fed. Cir. 1984).

The claims all include elements relating to the recording of images in defined ways, and Elson is not directed to recording. Further, one cannot say that any specific manner of recording images is inherent in Elson et al. There are many choices available. Also, the subject claims describe how the projected images must relate to the recorded images in order to achieve the

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purpose of the invention, which is to impart to an audience a sense of immersion in the projected scene through visual effect. The Examiner is referred to the discussion in paragraph [0022] of the application, as an example. Elson et al attempts to deliver a sense of realism by moving the simulator in conjunction with the projected scene, but does not disclose or suggest maintaining the axes of the recording camera and lens substantially horizontal, or matching of fields of view or viewing angles as claimed in claims 11, 17, 19-21. In actuality, Elson diverts the viewer's attention by the motion of the sphere in which the audience sits, but does not disclose or suggest methodology for projecting a realistic image, as is the case in applicant's invention.

Accordingly, the absence of any disclosure, teaching or suggestion in Elson et al. of features such as a downward looking audience where the screen extends below the audience, and the lens centerline being positioned away from the projector or film centerline, as discussed above, means that there is no anticipation and the Examiner is respectfully requested to withdraw the anticipation rejections.

4. Claims rejected under 35 U.S.C. § 102(b)

Claims 1-4, 7-11, and 17-21 were rejected under 35 U.S.C. § 102(b) as being anticipated by US Patent No. 5,845,434 to Hayashi.

The three main configurations disclosed in Hayashi are depicted in FIGS. 2, 8 and 11. FIG. 2 demonstrates how far off this reference is from the applicant's invention, and why someone ordinarily skilled in the art would not look to this reference as prior art for the purpose of designing a system as claimed. The figure discloses a theater having compartments for isolating viewers from each other and "their neighbors' noises" and allowing the viewers to eat and converse without "fear of bothering the neighbors." Col. 1, lines 12-15. The disclosure does not describe how or why the projected image would provide a feeling of realism and immersion in the scene. In fact, an image projected to an audience configured as if FIG. 2 would not be realistic. The walls and ceilings of the compartments themselves would restrict the view of any audience member. Although the patent says that each audience member has a "panoramic" view, that would not be the case, as can be seen from the drawing itself.

Secondly, the projector would be incapable of filling the curved surface with a realistic image. As is known to persons ordinarily skilled in the art, in order to fill a large screen surface as depicted in the '434 prior art, the image would need to be greatly magnified. Film used in a theater setting, such as described in the present application, has rectangular frames with the

horizontal dimension being greater than the vertical dimension. In order to fill the screen in the vertical direction, the image would need to be so greatly magnified that a significant amount of the image in the horizontal direction would overflow the screen and be lost. In the applicant's invention, there is no significant amount of the image projected upwardly, so the amount of magnification can be less, resulting in very little, if any, loss of image in the horizontal direction. This gives the audience a feeling of seeing a large scene, rather than just a portion of a scene as would be the case in the depiction in FIG. 2 of the '434 patent.

In the preferred embodiment of the present invention, the projector is positioned above the audience, as depicted in FIG. 1 and discussed in paragraph [0015] in order to accommodate the large projector and film transport system associated with large format film, which is the preferred film for the invention. The configuration depicted in FIG. 2 of Hayashi is wholly impractical for this purpose. Claim 1 has been amended to more specifically state that the lens axis is offset from the film centerline in order to move the horizon line without tilting the projector, and that the viewers are positioned below the projector. This allows for a large format projector to be positioned away from the audience, rather than in the center. This is explained in various places in the application, including paragraph [0015]. Hayashi makes no mention of this. As stated above, Hayashi does not appreciate the importance of maintaining a straight horizon (see FIGS. 8 and 11), and certainly, Hayashi has no appreciation for the need to match fields of view or viewing angles as claimed in claims 11, 17, 19-21. Applicant wishes to remind the examiner that if the horizon is distorted, other lines in the image will also be distorted. Paragraph [0015], among others, discusses this point.

The projector orientation in FIG. 8 and 11 teaches the problem depicted in FIG. 4 of the pending application, and will produce a distorted image. In order to project the most realistic image, it must first be recorded with the recording camera and lens being substantially horizontal, and then projected with a projector and lens being substantially horizontal. Tilting the camera during recording will create a negative effect as discussed in paragraph [0005]. Tilting the projector will produce the negative effect depicted in FIG. 4. The Hayashi projection system as depicted in FIGS. 8 and 11 will place the horizon in the wrong place, it will be curved, and the perspective and image angles will not represent reality.

For the same reasons as Applicant discussed above with respect to Elson et al, Applicant does not understand the Examiner's rejection of claims 11, 17-21 as anticipated by Hayashi. These claims all include elements relating to the recording of images in defined ways, and

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Hayashi is not directed to recording. No mention is made in Hayashi about maintaining the axes of the recording camera and lens substantially horizontal, or matching of fields of view or viewing angles as claimed in claims 11, 17-21.

5. Claims rejected under 35 U.S.C. § 103(a)

Claims 6, 12-16 were rejected under 35 U.S.C. § 103(a) as being obvious in view of Hayashi and further in view of US Patent No. 3,469,837 to Heilig. The Examiner states that Hayashi discloses all the structure set forth in the claims except for the structure of the curved screen, and it would have been obvious to modify Hayashi with the teachings of Heilig.

A person of ordinary skill in the art would not look to Heilig for any ideas about how to design a dome as claimed in claims 6, 12-16. From a projection standpoint, Heilig has the same problems as Figs. 8 and 11 in Hayashi. The projected image will be distorted. In order to have a realistic image, the scene must be captured or created virtually with a camera and lens that are horizontal. The projector must then project the image horizontally.

Regarding the screen construction, the structure disclosed in Heilig is entirely different than in the applicant's invention, and different problems are addressed. Heilig seeks to maintain polarization, minimize hot spots and maximize utilization of available light energy. Col. 5, lines 16-18. None of these things are part of applicant's stated purpose, which is prevention of unsightly lines caused by the illumination of edges of screen panels. This is summarized in paragraph [0009]. Heilig solves his problems by utilizing individually moveable components having varying surface curvatures, such as cylindrical (Fig. 6), convex (Fig. 7, 8, 9), ridged concentric rings (Figs. 8A, 8B), etc. These components are carried on plates or mosaic elements 24. Each of these plates "should be capable of being angled in different planes, for example, by being adjustably mounted on ball sockets as in FIG. 13. Col 4, lines 60-62. The Examiner should note that these plates do not touch one another, and that the upper edge is under the lower edge, the exact opposite of the construction claimed by applicant.

Furthermore, the structures in FIGS. 14-16 do not depict overlapping plates, but rather "thousands of mirrors (or semi-mirrors [which] may be pressed into one plate as shown in FIGS. 10, 11, 12 and 15. These mirrors can be either square or hexagonal (note FIGS. 14 and 16), and curved or flat (note FIGS. 12 and 15)... Col. 5, lines 19-22. How these "thousands of mirrors" may be pressed onto a plate offers no suggestion as to how the plates should overlap to prevent the problem noted in the applicant's patent application. The mirrors are actually a coating or

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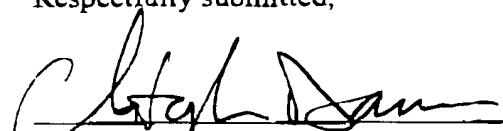
reflective surface on the plate, and do not suggest how the plates should be arranged relative to one another. FIG. 13, which does depict plates, arranges them in a direction opposite to the claimed invention.

There is absolutely no discussion of the construction as claimed in the application.

It is clear that 35 U.S.C. §103 requires an analysis of the claimed invention as a whole, i.e. an analysis of the claimed combination of elements, including each and every limitation encompassed by the pending dependent claims. Even where the claimed invention is comprised of individual components well known at the time of invention, “[w]hat must be found obvious to defeat the patent is the claimed combination.” The Gillette Co. v. S.C. Johnson & Son Inc., 16 USPQ2d 1923, 1927 (Fed. Cir. 1990). It is impermissible to simply to engage in a hindsight reconstruction of the claimed invention, using the applicant’s structure as a template and selecting elements from references to fill in the gaps. The *references themselves* must provide some teaching whereby the applicant’s combination would have been obvious. In re Gorman, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991). No such suggestion is present here with any of the references cited by the Examiner.

In conclusion and in view of the above, it is submitted that all of the pending claims recite limitations that are neither taught, disclosed or suggested by the cited references. Accordingly, this application is now in good order for allowance, and such early action is respectfully solicited. Should matters remain which the Examiner believes could be resolved in a telephone interview, the Examiner is requested to telephone the Applicant’s undersigned agent.

Respectfully submitted,



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